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ABSTRACT

A study identified significant issues currently confronting vocational education and described what role(s) the University Council for Vocational Education (UCVE) might pursue relative to each issue. To identify significant issues, a literature review, analysis, and consensus building were used. A Delphi method was used to build consensus on the importance of the issues identified. A 4-point Likert-type scale was sent to 65 respondents, who rated the degree of importance of clusters, categories, and issues. Data showed that all five clusters had over 3.00 rating. Only one achieved a high-level consensus on the degree of importance. Of the 21 categories, the highest rated was Purposes and Outcomes, then Teacher Education followed by Leadership. The Support Services category received the lowest mean rating of 2.87. The Purposes and Outcomes and the Support Services categories received high-level consensus ratings on the degree of importance. Of 94 issues, respondents achieved a high consensus on the degree of importance of 17; 76 issues received a medium-level consensus. UCVE institutional representatives who were mailed the results recommended various actions for each category. (Appendixes include the list of issues and their ratings, a participant list, and 77 references.) (YLB)

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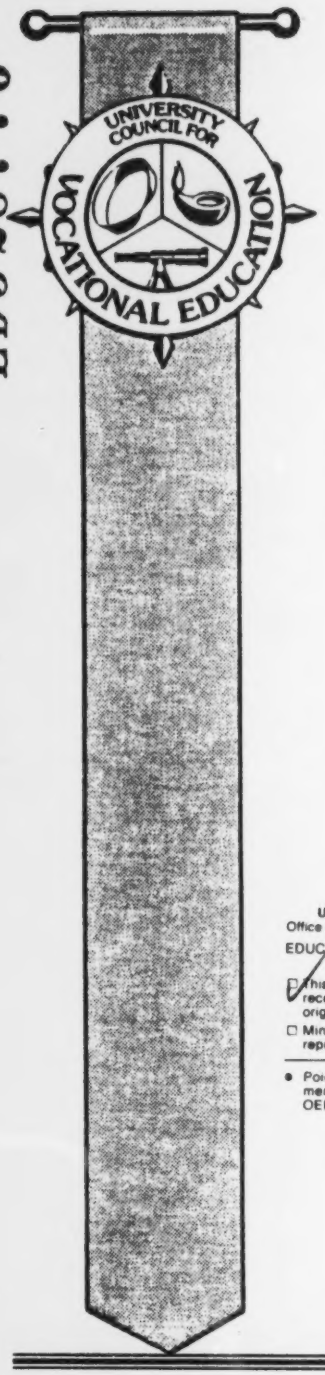

Significant Issues Confronting Vocational Education: Implications for UCVE institutions

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Introduction

This section discusses the prevailing conditions under which vocational education programs are operating. The purposes of the study are also described.

The Context

The 1970s and 1980s witnessed the resurgence of public interest and concern in the value of secondary and tertiary levels of education in the United States. The education system was asked to provide workers needed in the economy, enhance the individual, and save the social fabric that holds the family together. Currently, the United States does not have the "individuals needed to ensure America's ability to compete. So, once again Americans turn to the schools for solutions" (The National Center for Research in Vocational Education, 1987, p. 9). The *Nation at risk, Paideia proposal,* and *A place called school* discussed American education in general, while the *Unfinished agenda* and the *National Assessment on Vocational Education* delved into the roles and purposes of American vocational education at the secondary and post secondary schools. These reports reveal that the schools are not doing enough to prepare Americans for international economic competition, technological developments, and social pressures that impact on the life of the individual both at home and at work. *Time for results: The governors' 1991 report on education* (1986) advised that "Better schools mean better jobs. Unless states face these questions, Americans won't keep our standard of living. To meet stiff competition from workers in the rest of the world, we must educate ourselves and our children as we never have before" (p. 2).

Passow (1987) emphasized the importance of education in solving social concerns by stating that "America needs intelligent, skilled, caring, compassionate, creative individuals not only to compete industrially with Japan, . . . or other nations, . . . but because our nation believes a society is not healthy unless each individual fulfills his/her own potential" (p. 28). American education needs reform if it is to achieve the above goals. However, the major disagreement is: What to be done and how?

American education will satisfy its egalitarian and democratic goals if the society provides all the necessary resources and the education system provides the experiences that allow every individual to fulfill his/her own potential. Such experiences should expose all students to various educational opportunities that

may be used immediately for work or later for college. It is therefore surprising and disappointing to note that important reports such as the *Paideia proposal* (1982), the *Nation at risk* (1983), and the *Horace's compromise* (1984) did not find it worthwhile to include the study of vocational education as an important part of the secondary school curriculum. Phelps and Hughes (1986) stated that most of the reports dealing with education "have failed to include a substantive analysis of issues related to education for work and vocational education" (p. 52). The National Commission on Secondary Vocational Education (NCSVE) charged that the recent national study reports on education have "not adequately dealt with the role of secondary vocational education in addressing the problems of quality of American education" (1984, p. VII). Magisos (1984) found it absurd that a study of secondary education paid no attention to vocational education, even though it is where vocational education is concentrated. Howe (1983) wondered if vocational education should congratulate itself for the omission which might mean it is doing a good job, or if it should realize that it is perceived as an insignificant part of secondary education.

The second part of Howe's concern holds true for the following reasons. The *Paideia proposal* calls for a uniform academic course of study for all students, regardless of ability and disposition. It virtually eliminated choice—and vocational education—from the curriculum. The *Nation at Risk* proposed programs which did not include vocational education, and the Carnegie Foundation report, *High School,* criticized vocational education for its poor linkage to job opportunity and was disappointed with its placement record. The National Science Board Commission (in Magisos, 1984) made no mention of vocational education's contribution to technological literacy and came out against specific job skills training at the high school level.

But there are reports and individuals sympathetic to vocational education. Goodlad (1983) reported that an overwhelming majority of teachers, students, and parents surveyed view as important the intellectual, social, personal, and vocational aspects of schooling as important. He further suggested that good general education contributes most to economic competence and satisfaction in work and life and that such education must include vocational studies for all students that center on technological literacy, an awareness of how economics function, and a broad exposure to career and work. The NCSVE (1984) was blunt about the role of vocational education in educating Americans: "Vocational education must be a significant part of a quality high school education" (p. 2). Feldman (1988) defended the role of vocational education in providing the manpower needed for economic

competitiveness: "Our competitive position in the world was built on the superb technical skills and productivity of our people" (p. 3). The National Governors Association (in Jaschik, 1990) mentioned vocational education when it exhorts colleges to work more closely on vocational training with high schools and community colleges.

Purposes of the Study

Vocational education plays an important and significant role in the social, political, technological, and economic development of the United States. It provides workers with knowledge, skills, and understanding needed in production, construction, transportation, management, and other aspects of the economy. However, for vocational education to continue its contribution, the profession needs to be aware of the issues and concerns that influence the effectiveness of vocational education programs. Therefore, vocational educators need to stay current. Policy and opinion shapers, practitioners, theorists, legislators, community leaders, and others interested in vocational education need to be consulted and heeded by vocational educators. The opinions of such groups need to be utilized in shaping vocational education programs.

The purposes of this study are: (1) to identify the significant issues that are currently confronting vocational education and (2) where appropriate, to describe what role(s) the University Council for Vocational Education (UCVE) might pursue relative to each of the identified issues.

Related Literature

This section deals with a review of related literature on issues that are confronting vocational education. The review was extensive in order to provide and establish a context for the study. In addition, because of the nature of the study, which was both analytical and consensus building, the review comprises a significant part of the procedure for the study.

The issues

In its quest to improve education, the excellence movement of the 1980s has neglected the role of vocational education. To achieve excellence, most of the reports on education call for increasing the number of courses in mathematics, science, and English and for increasing high school graduation requirements. In addition to excellence issues, vocational education is confronted by other issues on the basic skills, equity and access, outcomes and expectations, and the delivery system. Other issues include vocational teacher preparation; technology's change, economic changes, and change in demographics. This section discusses these and other related issues.

For convenience, simplicity, and easy identification, the issues are grouped into five clusters: equity and opportunity (access), image and self-perception, program and practice, contextual concerns, and enhancement. Each cluster is further divided into categories, which contain specific issues. There are 21 categories.

Equity and Opportunity (Access)

The equity and opportunity cluster has two categories—namely equity and access. Equity deals with the question of "who benefits from vocational education?" while the opportunity (access) asks "where do those who enroll in vocational education go to get and/or learn about it?" It is important to note that these issues are interrelated and overlap.

Equity. Equity is perceived by the NCSVE (1984) as opening vocational education for all. Equity reaffirms the democratic and egalitarian goals of American education.

Change in demographics, economy, and social mobility make equity an important issue. In addition, legislators are increasingly demanding that schools provide programs for all. The Perkins Act (1984) requires vocational education to serve special-need populations, the disadvantaged, adults needing training and/or retraining, individuals entering nontraditional occupations, single parents, individuals with limited English proficiency, and inmates. In addition, the act requires the improvement of vocational education and its contribution to the economy by improving and developing quality programs, raising productivity and promoting economic growth (National Assessment of Vocational Education [NAVE], 1988a).

Budke (1988) challenged vocational education to "develop a qualified labor force through high quality, accessible, and equitable education" (p. VII). The NCSVE (1984) asked: How should vocational education redress sex bias and equity? What is the most equitable way of funding vocational programs? What type of students should enroll in vocational education program? Passow (1987) identified several issues related to excellence and equity: Do equity and excellence mean exposing all students to the same course content? Does equity of educational opportunity mean only equal access to knowledge or equal acquisition of the same knowledge? Increasing enrollment of the at-risk students, equitable distribution across all vocational program areas, reduction of both internal and external barriers to participation in the programs, implementation of individualized planning to respond to specific needs of at-risk students, and quality of programs are equity issues on which vocational education should concentrate (Budke, 1988).

Access. An important part of the educational enterprise, particularly in vocational education, is access. Phelps and Hughes (1988) viewed access as the broad and meaningful participation in vocational education by secondary school students, while the NCSVE (1984) defined access in terms of who knows about vocational education and those who go to the programs. The literature indicates that there is a disproportionate percentage of the disadvantaged (economically, culturally, school dropouts, migrants, and low educational achievement) in vocational education. According to the NAVE (1988a), evidence shows that high school vocational education is heavily sex segregated, and that youth from rural areas, and the handicapped have less access to high-quality vocational programs.

The NCSVE (1984) identified factors which curtail access in vocational education; i.e., increased emphasis on academics; consolidation of programs, time

scheduling, and inadequate or inaccurate student knowledge of vocational education. The NAVE (1988a) listed initiatives launched to change American secondary education; i.e., the increase in the number of mathematics and science courses required for high school graduation; introduction or expanded use of minimum competency examinations in writing, reading, mathematics, and others; and the establishment of advanced diplomas that require more course work in mathematics, science, foreign language, English, history, and social studies. Increased emphasis on academics aims "primarily at preparing students for college attendance—making it more difficult for students to participate in secondary vocational education" (NCSVE, 1984, p. 16). NAVE (1988a) concluded that these new requirements will increase enrollment in mathematics, science, and foreign language courses, but will have a "significant negative effect on enrollment in elective subjects, such as vocational education" (p. 5-3). The implication is that more students will have less access to vocational education programs.

Allowing students to choose from a comprehensive set of vocational and academic courses, more counseling, and vocational education in the comprehensive school are solutions suggested by the NCSVE (1984).

Some of the access issues identified include: Is the concept of "same for all" limiting students' access to vocational education? Should the enrollment of at-risk groups in vocational education be increased and equitably distributed? Should equal access and equity be insured in vocational education? Should vocational programs serve students regardless of their academic ability and career goal?

Image and Self-perception

Image and self-perception are two concepts in one. Image is defined as how others see vocational education. Self-perception is described as how vocational education perceives itself. The cluster contains three categories: public perception, leadership, and collaboration.

Public Perception. Vocational education has an image problem. The public does not perceive it as an integral part of the school program.

Why is there a negative image? Oakes (1986a) reported that the term "vocational education" is perceived as the antonym for academic education. In addition, students of vocational programs are perceived as prepared for low-status jobs (NCSVE, 1984; Silberman, in press). Silberman (in press) asked us to "witness the condescending way many routine occupations are characterized by the media.

Many children are ashamed to admit that their parents are not professionals. Vocational courses that prepare youth for low-status occupations are also stigmatized" (p. 15). Copa and Johnson (1988) reported a local counselor in Minnesota saying "We didn't want the picture out there that this is the place you come when you can't go anywhere else" (p. 115).

Change of name, integration and sustained public relations are recommended solutions to the image problem. Oakes (1986a) recommended changing the name from "vocational education" to either "technology and economic sciences" or "technological and economic literacy." Oakes believed such change will clear the distortions associated with vocational education—that of specific skills and the dichotomy between manual and mental activity. To succeed in life, both manual and mental skills are required. "Concrete, hands-on, and specific experiences are thought to prepare for the workplace and, conversely, abstract, paper-and-pencil, and mental activities prepare the mind for more complex future learning" and as long as the name "vocational," "career," "industrial," or "business" is used, "this false dichotomy will persist" (Oakes, 1986a, p. 70).

The NCSVE (1984), Schmidt (1985), The National Center for Research in Vocational Education (NCRVE) (1987), and Silberman (in press) recommended integrating academic and vocational education. The NCSVE (1984) perceived the benefit of integration as making education "more responsive to the unique needs of all students in our nation's secondary schools" (p. 8). Schmidt (1985) believed public perception will be more positive when vocational education incorporates basic cognitive skills in its program. In its *Integration of academic and vocational-technical education: An administrator's guide*, the NCRVE (1987) outlined reasons why integration is important. Silberman explains that integration is very important for the transfer of learning from one condition to another. A transfer could occur when the individual assumes responsibility for learning, when there is similarity of settings, and the individual understands the principles. These conditions "help to explain why it is important to integrate academic and vocational education" (p. 5).

Copa and Johnson (1988) reported that "part of the key to establishing the image of vocational education . . . was 'taking time to explain' what vocational educators do to others . . ." (p. 115). Clayton (1990) believed that "If we are to grow, gain respect, and meet the enormous expectations placed on our field by policy makers and the education establishment, we must overcome stereotyped thinking that says vocational education is second-class education for someone else's kids" (p. 8). Clayton suggested keeping the message that vocational education is essential to

the nation's economy and social well-being. Bright (1990) recommended a packet that contains a portfolio of successful vocational programs, examples of successful vocational program collaboration with industries, and to inform the public about placement rates of vocational programs.

Various issues need resolution to solve the image problem of vocational education. These include: Is vocational education perceived by the public as an integral part of the educational system? Are vocational educators held in high esteem by the public? Should strategies be designed for informing the public about vocational education?

Leadership. Another area closely related to public relations is leadership. Leadership theories such as autocratic versus democratic, or the contemporary theories of transformational and dyadic leadership styles, have been exhaustively discussed in the literature on leadership.

What is leadership and how can it be applied to solve the various problems plaguing vocational education? The NCSVE (1984) defined leadership as "taking charge" (P. 19). Goetsch and Szuch (1985) defined it as the "ability to generate, nurture, and maintain a group's desire to achieve a specific purpose or set of goals" (p. 13). Leaders in vocational education, therefore, have the responsibility to help the profession set up its goals, map out strategies to achieve them, and implement the strategies for the desired goals. The success of such leaders is dependent on how visionary, responsible, open minded, accountable, innovative, and dynamic they are. Of course the participation and support of the members of the profession are important for success.

In addition to exhibiting leadership characteristics, putting these qualities into action is needed. Goetsch and Szuch (1985) identified 13 strategies for putting leadership into action. These include participating in professional organizations; seeking new and better methods through research and practice; lobbying on behalf of the profession at all levels; being active in community volunteer activities; practicing public relations; being sure all personnel associated with vocational education are aware of its definition, purpose, and goals; updating plans; evaluating progress related to goals achievement; seeking innovative approaches; bringing in and training new professionals for leadership in vocational education; ensuring goal compatibility between the profession and individuals within it; and keeping morale high.

Various issues arise when leadership is discussed in vocational education. Who should champion the cause of vocational education? Are vocational educators themselves taking the leadership role? What should the reactions of vocational education be to such things as the education reports? And, more importantly, who will dictate the agenda for vocational education?

Collaboration. The responsibility of preparing American workers is no longer the purview of only public education. The NCSVE (1984) stated that "in today's rapidly changing world, the school alone cannot stay current with office technology, robotics, fiber optics, lasers, and other technologies" (p. 21). Increasingly, business and industry are constantly training and retraining their workers. Boyer (1985) estimated that corporations are annually spending between $40 and $60 billion to train and educate nearly 8 million employees. Budke (1988) indicated that many multinational corporations meet a major part of their education and training needs through their own programs.

Rapid technological advances aside, limited funding and aging equipment are factors that make it difficult for public vocational education to cope with industrial demands. Collaboration between business, labor, and schools is imperative. The need for collaboration is underscored by Buzzell (1990b) when he indicated that as changes in the workplace accelerate, it is becoming difficult and time consuming for vocational teachers to update specific objectives. Additionally, industry is anxious to play a larger role in affecting the skills mix of the workplace. There is a new effort by the American Vocational Association to work with industry in updating the skills needed at the workplace through a computer network (Buzzell, 1990b).

The benefits of collaboration for both schools and business are many. Collaboration will help keep school subject matter current and relevant to industry; students may have practical training opportunities; and the "mismatch" between vocational education and the labor market (Lotto, 1986) will be reduced. However care needs to be taken so that corporate interests do not supersede the individual's interests.

Collaboration raises some important questions. Will the collaboration envisaged by the NCSVE (1984), Budke (1988), and Buzzell (1990b) transfer curriculum and program control from vocational educators to business and industry? To what extent should business and industry collaborate with vocational education? Should collaboration be only at the curriculum level, equipment and supply, or where?

Program and Practice

The program and practice cluster is defined in a rhetorical form: What is the program of vocational education and how is it implemented? The cluster consists of the purposes and outcomes of vocational education, curriculum, instruction, delivery system, teacher education, program evaluation, and articulation.

Purposes and Outcomes. As society changes, so do the purposes and outcomes of vocational education. Society expects vocational education to provide the individual with social, economic, and educational skills. Helping individuals gain employment, go to college, or to retrain for new jobs and/or skills following displacement caused by technological and economic developments are other goals. Contemporary purposes of vocational education include eliminating sex-bias and stereotyping, ensuring equity and access, taking care of the disadvantaged, and helping the elderly to satisfy their leisure pursuits.

What are the purposes of vocational education? The debate continues. Wilms (1979) suggested that vocational education should shift its focus from narrow skill training to an education that improves students' abilities to read, write, compute, solve problems, and express themselves. Silberman (1982) called for vocational education to emphasize intrinsic goals: development of personal competence, aesthetic expression, integrity, cooperativeness, and altruism. Goodlad (1983) wanted vocational education to "provide all students with hands-on experience with woods, metal, film, computers, and the like" (p. 345), while Bottoms and Copa (1983) believed that vocational programs should lead to viability in the labor force, social stability, and an alternate approach to learning. The NCSVE (1984) added an interesting purpose of vocational education by proposing that vocational education is also an educational process. This means that vocational programs teach problem solving and analytical skills, reinforce basic communication and interpersonal skills, and promote their transferability to other settings. Oakes (1986a) wanted vocational education to provide to "all students highly-valued and essential knowledge, skills, and attitudes that will enable them to function intelligently as adults in an uncertain, tumultuous, technology-and-information-based twenty-first century" (p. 66).

Is it realistic to expect vocational programs to achieve all these goals? There is a controversy on what Lotto (1986) called the match and mismatch of vocational

education expectations and outcomes. She indicated that the "claims for vocational education programs often exceed the research base" (p. 41), while Navaratnam and Hillison (1985) alleged that vocational educators and administrators have a "difficult time justifying the economic outcomes of their field" (p. 1).

The discussions on the purposes of vocational education raise many issues. What should vocational education purposes be? Do vocational programs provide the outcomes they claim to provide? Is vocational education part of the academic curriculum? Should students at the secondary level be prepared for college, or employment, or both? Is vocational education a body of knowledge, an educational process, or both? Because of the constant changes in the society, should vocational programs provide experiences to help individuals have a successful family life? To what extent should vocational education be responsive to the labor market?

Curriculum. The term curriculum is broad and lacks standard definition. However, its use here denotes the content or subject matter of a program. The curriculum is directly tied to the goals, purposes, and objectives of a program. With numerous responsibilities assigned to vocational programs by society, what should the "ideal" or "standard" curriculum be?

Boyer (1983) wanted to eliminate the narrow 'marketable' skills courses that have "little intellectual substance, courses that give students 'hands-on' experience while denying them a decent education" (p. 127). Goodlad (1983) recommended "a common core of studies from which students cannot escape through elections" (p. 297). Ideally, vocational curriculum should represent a spectrum of experiences which relate to real-life (NCSVE, 1984). The curriculum should include materials that will challenge and enrich the students, and tap their skills of problem solving and creativity.

Integration, the combining of academic and vocational curricula, is again recommended as a solution. The NCSVE (1984) recommended the selection of curriculum and experiences which bridge the gap between the so-called academic and vocational courses. Oakes called for a reconstruction of vocational education that shifts vocational education away from training skills to the traditional academic disciplines because they "represent the most solid knowledge that underlies all of the enterprises that we call work" (1986a, p. 70). Feldman (1988) recommended emphasis on communication, history, math, and science. Such programs should help the student read quickly, listen carefully, comprehend easily, write clearly, and calculate accurately—skills that are traditionally associated with academics.

Silberman (in press) points out that "integration of academic and vocational education is the latest theme in school reform" (p. 1), and that vocational teachers will be expected to have their students do more reading, writing, math, and science. A new state-of-the-art-curriculum in vocational education is under development by using computer technology to link up education with business and industry. Buzzell (1990a) explained how it works: "Industry would be encouraged to work with vocational educators by constantly updating the competencies they expect from entry-level workers. Using a 'master' computer to hold the enormous database required, information could be transmitted on a regular basis to a 'host' computer at each vocational school site. The 'host' computer in turn would be linked to personal computers in each classroom" (p. 10).

It is apparent from the review that various issues exist. What should the curriculum of vocational programs be? What type of curriculum is adequate in vocational education? Which types of learning experiences are beneficial? Is there an occupationally-related curriculum which should be part of all student learning? What is the "ideal" balance between academic and vocational curricula? Are vocational programs without "intellectual substance" as some critics claim? Should there be one curriculum for all students?

Instruction. Instruction and curriculum go together. The NCSVE (1984), Oakes (1986a), the Holmes Group (1986), and the Carnegie Forum on Education and the Economy (1986) emphasized the need for alternative, more effective methods of instruction. The NCSVE (1984) opined that vocational programs should provide instruction by creating contexts for problem solving, gathering and analyzing information, and the use of scientific inquiry and reasoning. Oakes (1986a) wanted vocational instruction to emphasize learning processes and to reinforce cooperation, problem solving, communication, decision making, commitment, confidence in abilities, and boldness in developing ideas and approaches. These skills are now called higher order thinking skills (HOTS).

Issues raised in the literature dealing with instruction include: Which instructional methods, techniques, and materials are optimally effective in teaching vocational and basic skills? Which type of learning experiences are most beneficial in vocational education? What are the most effective methods of combining basic skills with occupationally relevant training? Does vocational education have evidence to show which instructional methods are most effective?

Delivery System. Three major questions dominate the delivery system: Where is vocational education provided, what types of program are there, and how many people benefit from them? Goetsch and Szuch (1985) identified 31 delivery systems. The comprehensive high school, area vocational center, and community college are "the primary public vehicles for delivering vocational education to the community" (p. 6). Budke (1988) listed publicly funded secondary and post-secondary vocational education institutions; federally funded training programs (such as the JTPA); the military; on-the-job-training offered by business, industry, and trade unions; proprietary vocational schools; and apprenticeship training programs as the sources for vocational education.

Each vocational education provider has unique purposes, goals, and clientele. The comprehensive high school is designed to meet the needs of the community it serves. The area vocational center meets the needs of school districts, while the community college seeks to meet the needs of all adult members of the community in which it is located (Goetsch and Szuch, 1985). Some of the delivery systems deal with youth, while others are exclusively for adults. Competencies focused by the system range from literacy skills to technical proficiency in skill jobs, from personal development to work socialization (Budke, 1988). For example, a comprehensive high school provides college preparatory, general education, job preparatory, and exploratory programs. A typical area vocational center offers job preparatory vocational education during the day for high school students from a district. At night, the same center offers adults job preparatory vocational programs, adult supplementary training, and adult basic education (Goetsch and Szuch, 1985).

The Job Training Partnership Act (JTPA) of 1982 provides a variety of training programs primarily for economically disadvantaged youth, adults, and displaced workers. JTPA "focuses on training for occupations for which there is a demand and growth" (Budke, 1988, p. 10). At the post secondary level, over one hundred and fifty occupations are taught to adults under agriculture, business and office, marketing and distributing, health, home economics, and trade and industry (Evans, 1982).

Enrollment in vocational education is substantial. It accounted for 20% of the total course work taken by high school graduates in 1982 (The NAVE, 1988a). In 1970, there were 6 million students enrolled in secondary vocational education, and in the 1980s, the figure jumped to 10 million (The National Center for Education Statistics [NCES], 1984). At the post secondary level, enrollment has increased sharply from fewer than 1 million students to over 10 million (NCES, 1984). Over

23 million people participated in more than 43 million adult education courses during the year ending May 1984 (Center for Statistics, 1986). These figures do not include vocational education and training offered by business and industry, proprietary vocational schools, and the military.

Some issues of relevance to the delivery system include: What types of education and training can be provided most effectively by which provider? At what grade level should vocational education take place? Should vocational education be provided only by business and industry? Where are the basic skills needed for success in the workplace best taught?

Teacher Education. Vocational education may respond more to its responsibilities if vocational teachers are prepared professionally. Teacher education was put under close public scrutiny in the 1980s mainly because of the perception that schools are failing in their education responsibilities. Teachers are perceived to share the responsibility for this failure.

The decline in teacher proficiency was explained with various reasons. The National Commission on Excellence in Education (NCEE) reported that "not enough of the academically able students are being attracted to teaching; that teacher preparation programs need substantial improvement; that the professional working life of teachers is on the whole unacceptable; and that a serious shortage exists in key fields" (1983, p. 22). To show its dissatisfaction, Murray (1986) reported that the Holmes Group set up five goals for teacher education programs: make the education of teachers intellectually sound; recognize differences in teachers in areas of knowledge, skill, and commitment; create standards needed for entry into teaching; connect education schools with schools; and make school better places in which teachers can work and learn. The Carnagie Forum on Education and the Economy (1986) report focused on the environment within which teachers operate. The Forum believed that not many individuals with the capacity for competence will want to work in a setting which does not encourage, appreciate, and support or allow competence. Goodlad (1983) beautifully captured the dilemma of teachers in this way:

> Those individuals who enter teaching today work in circumstances that include some gain in their autonomy in the community accompanied by some loss in prestige and status; an increase in the heterogeneity of students to be educated, especially at the secondary level; increased utilization of schools to solve critical social problems

> such as segregation; a marked growth in governance of the schools through legislation and the courts; continuation of relatively low personal economic return; limited opportunities for career changes within the field of education; and continuation of school and classroom conditions that drain physical and emotional energy and tend to promote routine rather than sustained creative teaching. (p. 196)

The above problems also plague vocational teacher preparation. Teachers are underpaid, underprepared, and are asked to work miracles (The NCSVE, 1984). Added to the problems of reorganization, unification, modernization, and redirection, vocational teacher education also "faces declining financial support, lower enrollments, program image problems, outdated curricula, and a decreasing teaching force" (Budke, 1988, p. 18). Additionally, teacher recruitment is hampered by low salaries, and teacher preparation programs vary in strength and vigor even within a given state (The NCSVE, 1984).

What are the solutions to teacher education problems? Ryan (1988) advised that educators must be constantly aware of the changing demographics that impact the appropriateness of teacher education course content. Luft, Zimmerer, and Kercher (1988) warned that "unless preservice and inservice teacher education programs keep pace with the educational requirements of society, teacher preparation programs will be ineffective. This is apparent in vocational teacher education where the demographics of vocational students include a larger proportion with special needs, including learning disabilities and language barriers" (p. 39).

The NCEE (1983) recommended seven ways to improve the preparation of teachers and to make "teaching a more rewarding and respected profession" (p. 30). The recommendations, according to Passow (1986), dealt with the selection and preparation of teachers, inducement for recruiting more able students into teaching, inservice continuing education for teachers, appropriate compensation career ladders, master teachers, and employment of qualified individuals without pedagogical experience. The NCSVE (1984) suggested ways of dealing with teacher education problems. Scholarships, extended contracts, opportunities for updating occupational and teaching skills, time for parent and community contacts, and provision of modern instructional equipment and materials are ways to solve recruitment problems.

A more radical proposal came from the Holmes Group (1986) when it recommended professional studies be removed from the undergraduate curriculum and be placed at the graduate level, and undergraduate majors in education be eliminated. Budke (1988) perceived this to be advantageous because it may encourage many excellent, would-be vocational teachers from colleges, business and industry, or the military to reconsider their career options. However, he cautioned that this may have "serious implications for vocational education so reliant on work experience as a key criterion for teachers" (Budke, 1988, p. 18).

Adams, Pratzner, Anderson, and Zimmerman (1987) recommended vocational teacher preparations deal with the needs of special students, minority vocational teacher retention, adult learning and development, career ladder initiatives, teacher career development and lifelong learning, basic and higher order skills, and preservice and inservice training. Any teacher education reform should develop attitudes about education that "promote anticipation of the changing needs of society, of new discoveries and extensions of the knowledge base, and of the need for lifelong learning in a rapidly changing society" (Luft, Zimmerer, and Kercher, 1988, p. 44).

Analysis of the problems facing teacher preparation in vocational education education elucidates several issues. How can vocational teacher preservice and inservice preparations be updated and upgraded? How can minority vocational teachers be attracted and retained? What characterizes a competent beginning teacher? How is competence of a teacher measured? What is the impact of high standard for preparation and certification on the supply of new vocational teachers? What is to be done about nondegreed vocational teachers?

Articulation. The NCSVE (1984) and Budke (1988) expressed two major concepts concerning articulation. The NCSVE (1984) defined articulation as "establishing close working relations among elementary, secondary, and post secondary schools" (p. 17). When related to vocational programs, this concept implies that vocational education is also appropriate at the elementary level. It also calls for the delineation of the type of vocational program needed at each level of the education structure. To be effective, there is a need for constant communication between the institutions as well as cross-checking of program offerings.

Budke (1988) defined articulation as the "coordination of educational programs that allows students to progress without duplication of time, effort, or expense to themselves or to taxpayers" (p. 20). Therefore, intra-institutional efforts

call for the establishment of a network (coordination) that will ensure no program duplication. Budke (1988) explained that such articulation should ensure that college credit is given for mastery of competencies at the college level. Resources, faculty, facilities, and equipment need to be shared. This is in line with what the NCSVE (1984) advocated in that cooperative learning experiences should reinforce and convey the interdependence of the various occupational fields.

The concept of articulation raises various issues, among which are: What type of articulation should there be among the various education segments? To what extent should there be an articulated vocational education programs at the elementary, secondary, and tertiary levels? How should conceptual differences such as terminology, goals, outcomes, and others be reduced?

Program Evaluation. Vocational education is influenced by many factors—social, economic, and technological—that it has no control over. These same factors necessitate the constant need for individuals to train and retrain.

"Standards" is a term associated with program evaluation. Generally, federal and state program standards are used for evaluating program effectiveness. The advisory groups, written program plans, equipment and facilities, staffing and staff development plans, access, and statute compliance are part of the standards. Are these standards satisfactory in ascertaining program quality? The NCSVE (1984) is concerned that the standards, valuable as they may be, do not "typically lend themselves to or include assessments of instructional quality or student achievement" (p. 16). To provide useful data for program monitoring and improvement, program evaluation "must include information on what goes on in the classroom and how students are affected" (p. 16).

"Accountability" is another term associated with program evaluation, which is defined as the assessment of "compliance with federal and state mandates for program quality" (NCSVE, 1984). The new vocational education laws define accountability as the ability of vocational educators to "produce job-ready workers who have the theory and basic skills essential to successful job performance in this society" (Buzzell, 1990b, p. 10).

To ascertain the quality of vocational programs, some issues need to be settled. These include what is/are the purpose(s) of vocational education? Which aspects of vocational programs should be evaluated? And who should decide the effectiveness of vocational programs?

Contextual Concerns

The contextual concerns cluster is defined as the environmental conditions and/or situations that impact and affect the practice and program of vocational education. Categories in this cluster include basic skills, excellence, technology's change, demographic change, and economic changes.

Basic Skills. Contemporary society demands the mastery of communication skills, computation, and computer manipulation. For example, Walker (1980) reported result of a survey which indicate employers want graduates to possess direct job skills and other related skills. In addition, the Committee for Economic Development Policy Statement on Public Education (in Levine, 1985) finds that the "requirements for successful entry level employment . . . are not at all job-specific or technical skills but are basic communication skills, interpersonal skills, higher level thinking skills . . . and a set of attitudes which reflect a willingness to work hard and follow through on a job" (p. 9).

The persistent call for "returning to the basics" (Adler, 1982; Oakes, 1986a; and others) makes it necessary to determine what these skills are and how and where to provide them. The Education Commission of the States (1983) defined basic skills as the ability to literally comprehend a simple written passage, compute with whole numbers, and master writing mechanics. The NCSVE (1984) perceived the basic skills as reading, writing, arithmetic, speaking, listening, and problem solving. Phelps and Hughes (1986) believed that the basic skills are to read, write, communicate, and compute. The NCRVE (1987) defined common-core basic skills as mathematics, science, communication, and computer literacy. *Centergram* (1990) reported that approximately 30 million adults in America have inadequate basic skills—deficiency in reading, writing, speaking, listening, and/or computational skills.

The dilemma for vocational education therefore is which set of basic skills should it provide and how much time should be taken to provide them. Budke (1988) suggested that "the development of basic skills is not the sole responsibility of the academic curriculum. All students—academic, vocational, or general preparation—must be helped to meet the higher standards that are emerging" (p. 19). Job success is also related to the mastery of the basic skills, with employers demanding their employees exhibit these skills (Budke, 1988; The NCRVE, 1987, and Walker, 1980).

Therefore, some issues associated with the basic skills include: In what ways should academic concepts be better integrated with vocational training? Which basic skills are needed for success in the workplace and the ever changing society? Where are they best taught? Does mastery of the basic skills translate into successful job performance?

Excellence. The deepening neglect of the role of vocational education in the pursuit for excellence and the recommendation for more academics evidence the traditional rivalry between liberal and vocational education. The NCRVE (1987) reported that "increased academic rigor is again the order of the day. Excellence studies call for educational programs—for all students—that are more like those of the successful Japanese. A more classical curriculum is called for" (p. 9).

What is excellence and how can it be achieved? The literature does not provide a clear definition of "excellence," except for some requirements for its achievement. Longer school days, school weeks, or school years, and higher student achievement standards are demanded. Consequently, the NCRVE warned that "These solutions have a very critical weakness: they sometimes have little connection with reality" (1987, p 9). Feldman (1986) characterized this definition of excellence as exclusive and elitist, which will not help the pluralistic nature of the U. S. society.

Are the school reforms a success? Not according to Cavazos (1990) and Clark (1990). Cavazos, the Secretary of Education, called the school reforms of the 1980s largely a failure and that immediate and radical reforms are needed. "As a nation we are still not seriously committed to improving education for all Americans" (*Chronicle for Higher Education* , 1990, p. A3). Clark (1990) called the reforms "a misdirected school reform movement that has produced little, if any, measurable result in its effort to effect change, or even to set national goals and strategies for career development and vocational education programs" (p. 82). Feldman (1986) wanted a definition of excellence that:

> provides both the specific and the general and acknowledges that the road between them is a two-way road. We can move both from the general to the specific and, as vocational educators have been demonstrating for decades, from the specific to the general. We need a definition of excellence that will tend to integrate the educational enterprise and not resume the destructive process of fragmentation. (pp. 58-59)

The NCRVE (1987) synthesized some of the reasons given for rationalizing the excellence movement; i.e., that American schools should have the rigor of Japanese schools because they are successful, the United States is becoming a nation of illiterates, the falling SAT scores prior to 1983 proved that American youth were getting a second-rate education, employers want to hire graduates who have a strong foundation of basic skills, whom they can train in specific technical skills on the job. Additionally, vocational education does not prepare students to succeed in the world and should be eliminated from the curriculum, higher standards and a more vigorous educational curriculum are needed, and that those opposed to a strict, single-curriculum, back-to-basics thrust are all vocational educators protecting their turf.

Excellence cannot be achieved at the expense of a large segment of the society. Individuality needs to be considered, which enhances the quality of American education. Feldman (1988) said as much when he indicates that "We need to free ourselves from definitions of excellence that exclude large numbers of students who achieve in traditionally undervalued ways. Such definitions only prevent us from appreciating and nurturing the excellence in each student as an individual" (p. 6). Vocational educators should be explicit in their demands for a definition of excellence that will appreciate and recognize the diversity of the American student population.

Issues arise as to what is excellence and which concept of excellence should guide the provision of education experiences for all students. If excellence is going back to the basics and the preparation for academic life, what of those individuals who are more interested in learning by doing, and the integration of theory with practice? Do the prevailing concepts of excellence limit or increase access and equity? Shouldn't vocational education be considered as part of the drive for excellence?

Technology's Change. Technology influences people and the environment. Technology has both advantages and disadvantages. The advantages include new jobs, new materials and products, increased efficiency, and improved access to natural resources. It has also helped in increasing the flow and availability of information, and in making global decision-making more instantaneous.

Technological disadvantages include a system that is outgrowing and overpowering its creator, robbing "human freedom by supplying ever-newer, and

ever-more effective techniques for controlling human behavior" (Truitt and Solomons, 1974, p. 4). Feldman (1986) added that "technology for all its exciting benefits is the enemy of social continuity—that priceless sense of place and context which makes stability and self-development possible" (pp. 55-56).

Technological changes, therefore, impose the need for the continuous updating and upgrading of knowledge, understanding, and skills. The National Science Board Commission (NSBE) insisted that "students must be prepared to understand technological innovation, the productivity of technology, the impact of products on technology, and the need for critical evaluation of societal matters involving the consequences of technology" (1983, p. 44). More relevant to education is the Commission's observation that "computers are revolutionizing many areas of our lives; they may well do the same for education" (p. xii). Vocational education, much of which deals directly with technology, provides the individual with the opportunity to learn and develop new important skills.

Passow (1986) identified two aspects of technology that are of interest to educators—technology as a subject matter to be studied and technology as an instructional resource. Technology as a subject matter, technology for instructional purposes, and up-to-date technological advances as they relate to the workplace are effects of emerging technology on vocational education (Budke, 1988). Computers, television, computer-based telecommunications, videodisc systems, and robotics are instructional aids available to education.

Vocational educators need to be familiar with emerging instructional technologies and how they affect learning. Curriculum developers need to monitor technological developments and revise curricula to include emerging concepts (Budke, 1988). Major issues under this category include: Should the study of technology be required of all students? How should technology be taught in vocational education? How should technology be used in instruction? Should technology be used to facilitate instructional management without differentiation?

Economic Changes. The last twenty years have witnessed a shift in the U.S. economy from predominantly manufacturing and construction jobs to that of service occupations. Lathe, milling, and drill press skills give way to skills needed for data entry, keyboarding, and information processing. In addition, international competition to U.S. business and industry also calls for the need to retrain American workers. Zahinser, Ashley, and Inks (1985) and Budke (1988) agreed that the United

States has lost many industrial jobs because of international competition and cheap labor.

The United States, therefore, needs to shift its priority from training in low-level skills to higher-order thinking skills. Reich (1983) argued that whatever the final products, "those parts of its production requiring high-volume machinery and unsophisticated workers can be accomplished more cheaply in developing nations" (p. 121). Skilled labor is the only dimension of production where the United States can retain an advantage over developing nations (Reich, 1983). *Workforce 2000* (1987) agreed by concluding that "business, labor, the schools, and the nation will all need to reflect on how well they are positioned to meet the increasingly higher level skills and education . . . required by the jobs of the future" (p. 1). Most future jobs will be provided by small businesses, and "many of these jobs will result from the entrepreneurial spirit currently affecting the economy" (Budke, 1988, p. 12). This is where vocational education can train the individuals needed for such jobs.

The shift from big corporations to small businesses directly impacts on the economy. In addition to basic skills, the new jobs will require higher-order thinking skills. Miller (1990) pointed out that "successful efforts by vocational educators to develop students' higher-order thinking skills can directly improve their ability to succeed in the workplace" (p. 26).

The analysis on economic changes raises some issues. What role should vocational education play in making the American economy more competitive internationally? Should "international education" be part of vocational education? Should vocational education programs emphasize high-tech occupational fields?

Demographic Changes. Demographics are changing quickly in the United States. There is an increase in the number of minorities, Americans aged 65 and over, nontraditional families, and pregnant teenagers.

Workforce 2000 (1987) found many companies have a large percent of female in their workforce. More than 50% of the companies report a 20% minority workforce. Foster, Jackson, Cross, Johnson, and Hardiman (1988) projected that by the year 2020, American Indians, Asians, Africans, and Hispanics will constitute a minority majority in the United States. Budke (1988) reported that over one-third of new births are to minority parents. The shift in demographics and the composition of the workforce make corporations worry more about cultural diversity (*Workforce 2000*, 1987).

Are educators prepared to deal with this situation? Which type of classroom setting is most suitable for such groups of people? Will it be "business as usual" even though such groups of people have different values, expectations, and outlooks?

Every year, the number of adults attending adult education classes is increasing. To learn new knowledge and skills, to retrain for a job that requires new skills, and learning how to best spend leisure time are some of the reasons given by these adult learners. The "greying" of America is on the march. The United States is "rapidly becoming a nation with many older citizens who will place increasing demands on the education system" (Budke, 188, p. 9). Harper, (1990) said by the year 2030, 66 million (21.8% of the population) will be 65 and over.

The changes in the older population will "create and expand opportunities for careers providing high quality care to older people and helping prepare them and their families for productive retirements and aging process" (Harper, 1990, p. 14). Vocational education has a dual responsibility in serving the older population. First, it helps them in sustaining livelihood by providing them with educational experiences that are compatible with their way of learning. These classes provide adults with the opportunities for enhancing self-esteem. "Vocational education is in a unique position of influencing the quality of education older people, their caregivers, and the corporate sector will receive" (Harper, 1990, p. 14). Second, older adults need services in health management, recreation and the like, therefore, "vocational educators will be responsible for preparing many of the workers who will provide health care and other types of services for the elderly" (Harper, 1990, p. 14). Vocational education should provide leadership by developing and training people in careers that service the elderly.

The traditional family setting of a working husband, domestic mother, and two children is changing. Only 7% of the American family represent such a structure (Rossman, 1985). Trafford (1984) reported that 1 in every 7 American families is headed by a woman, up from 1 in 10 families in 1960. In addition, two-income families are increasing, with implications to the market place. "The time demands of two-income families create a market for personal services and for time-saving appliances" (Smith, 1988, p. 9).

The increase in number of pregnant teenagers is another demographic change that affects the social fabric of American society. It is associated with such social vices as unemployment and school dropout. DiPerna (1984) outlined the negative influence of teen pregnancy in this way: "According to the Alan Guttmacher

Institute, 80 percent of teenage young women who drop out of school do so because they are pregnant; 90 percent of teenage mothers eventually join the ranks of the unemployed; and 66 percent eventually receive welfare payment" (pp. 57-58). There is the need to help such teenagers. Budke (1988) believed that "vocational education programs, career counseling, job search skills, placement assistance, development of basic skills, employability skills, work habits, and attitudes are all critical needs of these youth" (Budke, 1988, pp. 8-9).

Enhancement

The enhancement cluster is defined as the prevailing factors/components needed to enhance the provision and implementation of vocational education programs. The categories associated with this cluster include standards and accountability, research, support services, and funding.

Standards and Accountability. The public (federal, state, and local) aspect of leadership in funding vocational education is based on standards and accountability defined as "measuring up" (NCSVE, 1984, p. 16). The standards are statements of quality that were established to ensure "the quality of vocational education at the local level" (p. 16). Advisory groups, program plans, equipment and facilities, staffing and staff development plans, access, and statute compliance are the areas covered by standards.

As important as the standards are for learning, they are silent on instruction. The NCSVE (1984) is concerned that the areas do not lend themselves to assessment of instructional quality or student achievement.

Accountability is not only related to compliance with established standards, but how well the objectives of the programs are achieved. Traditionally, vocational programs are responsible for providing occupational skills, assessing student attainment of job skills, the placement rate, and follow-up (NCSVE, 1984). However, current legislation and mandates add the acquiring of basic skills to the above list (Buzzell, 1990a & b). Additionally, "both the Senate and the House bills [on vocational education] emphasize that states must use the input of business and industry in developing and implementing standards of performance" (Buzzell 1990a, p. 10).

Issues considered include: How should the quality of curriculum be assessed? What should be evaluated to ascertain the effectiveness of vocational education

programs? Who should assess vocational programs? How should vocational education be held accountable to federal and state mandates for program quality?

Research. To improve and innovate programs, vocational education needs constant research. To enhance accountability and public image, vocational education needs to show evidence of its effectiveness.

Critics of vocational education charge that little relevant research is conducted in vocational education. Navaratnam and Hillison (1985) claimed that vocational educators and administrators have difficulty justifying the economic outcomes of vocational education. Oakes (1986b) charged that "the theory, research, and practice of vocational education have been constrained by taken-for-granted assumptions and a largely uncritical stance toward enquiry" (p. 33). Lotto (1986) questioned the claims that vocational education helps retention in high school and proficiency in basic skills because these outcomes are not well supported empirically.

Proponents of vocational education countered that some of the criticisms are unfair. They question why, for example, vocational education should be held exclusively responsible for helping students learn the basic skills (Parks, McKinney, and Mahlman, 1987). Weber, Puleo, and Kurth (1989) conducted a study on basic skills reinforcement in secondary vocational education classrooms. They found that basic academic skills are an inherent part of most vocational skills/tasks, and that vocational classrooms offer frequent and varied opportunities for reinforcing and enhancing students' basic skills. The proponents also charged that vocational education critics capitalize on mundane variables. Weber et al. (1989) charged that many studies "examine the amount of time spent on basic skills instruction in vocational settings; however, they did not look at the nature and types of basic skills being addressed, the climate and organization of the learning environment, or the nature of the instructional materials and activities involved" (p. 29).

Several solutions were forwarded to deal with research problems in vocational education. Oakes (1986b) recommended critical inquiry in which context is the focus of vocational education inquiry. Four domains form the context: individual, classroom, school, and society. "Information should be gathered about the processes and meanings of vocational education in all these domains" and their interrelatedness in and out of school (Oakes, 1986b, p. 43). Lotto (1986) called for research on the direct impact of vocational education on student skills, knowledge, and attitudes, as well as societal goals. Result of a study "An analysis of priorities for vocational education research and development," by Schmidt, Lynch, and Frantz

(1988), identified the effectiveness of vocational education; vocational program development and improvement, including curriculum development; basic skills development in vocational education; policy studies in vocational education, including the impact of future workplace and societal changes in vocational education; collaborative relationship development; provision for students with special needs, including addressing the issues of access and equity; and clarification of the federal role in vocational education as research priorities for vocational education.

Issues raised under this category include: Should research be conducted to provide evidence that vocational education provides students with both economic and social benefits? Is there a type of research that is most suitable to vocational education? Should there be research on what actually happens in vocational classes?

Support Services and Funding categories did not have separate sections because a review of related literature did not retrieve direct information on these categories. Items in the instruments relating to Support Services were transfered from other categories, while some Delphi members suggested Funding. Funding is implicit in most of the categories and issues such as "Should financial support be provided to encourage adults at-risk to participate in vocational education programs?" which is in the Support Services category.

Delphi Technique

A Delphi technique was used to build consensus on the importance of the issues identified. The Delphi provides the possibility of securing consensus within a group of experts without using face-to-face group interaction (Borg and Gall, 1983; Dean, 1980).

Open forum, a conference, or a round table discussion are other methods used to reach consensus on a particular topic, subject, or problem. But these techniques subject participants to personality conflict, authority, group pressure, and unwillingness to publicly share an expressed opinion (Dean, 1980). The reliability of such techniques is sometimes questioned because of these influences. The Delphi process eliminates group activity and replaces it with a systematic process of sequential questionnaires with information and opinion feedback (Cyphert and Gant, 1971), thereby increasing the reliability of responses (Dean, 1980). It also

provides a statistical group response, in that group opinion is defined as an appropriate aggregate of individual opinions on the final rounds (Dean, 1980).

The Delphi, however, has its own set backs. The heavy expenditure of time in completing the questionnaire is a limitation since it usually requires a considerable amount of time—two or more months—to carry out several rounds. Drop outs, filling in the questionnaire without much thought, the cost of materials (stamps, envelopes, papers, phone calls, etc), and the psychological effect of "burn out" or getting tired of the whole process which might result in a biased overall response are other limitations (Borg and Gall, 1983; Dean, 1980).

Bernstein (1969) in Khaleel (1986) reported another disadvantage in that participants do not like to start with a tabular rasa (blank or clean slate). To minimize the effects of these limitations, a "modified Delphi technique" was used to build consensus on the importance of the identified issues. It was modified in that respondents were mailed statements of clusters, categories, and issues that are important to vocational education.

Although the literature did not reveal a prescriptive procedure for conducting a Delphi, its format can be generalized as follows: (1) prepare a set of questions or statements for evaluation by panel of experts, (for example, in the case of this study, the initial instrument listed the issues confronting vocational education); (2) select a group of experts, knowledgeable in the subject of the investigation to respond to the questionnaire; (3) ask the selected experts to indicate the importance of each issue on a given scale, and also ask them to add, delete, and/or modify any of the issues; (4) circulate a revised instrument giving the median score for each item as obtained by the first round; (5) ask the panel to re-evaluate its responses based upon information provided by the analysis of previous responses; and (6) repeat the entire procedure if necessary in an effort to obtain a well thought-out consensus.

Other statistics of reporting the responses could be used as well. For example, the interquartile range for each item is included to provide the respondents with a sense of the variability of the experts' responses (Borg and Gall, 1983). This is the statistics used for this study. Persons with extreme responses relative to the median are asked to give reasons for their ratings. The reasons are then included in a subsequent questionnaire to give respondents additional insight into the question or problem.

The Delphi has utility in education. Weaver (1971) explained that the Delphi can be used appropriately and effectively as a method of studying the process of

thinking about the future, or as pedagogical or teaching tool; and as a planning tool which may aid in identifying the priorities held by members of an organization or profession. Bruno (1976) indicated that the Delphi process may assist in "establishing priorities in education by identifying those priorities of individual members or a segment of society who ultimately influence the course and direction of education" (p. 256).

The Delphi process was used in this study to build consensus on the importance of the identified issues confronting vocational education.

Methodology

This section explains the methods used to analyze and collect data. It describes, in detail, the procedure utilized to develop the study instrument and the members of the Delphi panel.

Identifying the Issues

To identify significant issues confronting vocational education, analysis (literature review) and consensus building (Delphi process) were used.

Analysis (Literature Review)

A comprehensive and in-depth literature review on vocational education, including issues that impact on the programs, was done. The purpose of this was to retrieve and critically examine the issues that practitioners believe to be important to vocational education.

To insure comprehensiveness, the data bases used for the literature review include Educational Resources Information Center (ERIC), Resources In Education (RIE), Education Index, Social Science Citation Index (SSCI), Current Index for Journals in Education (CIJE), Psych Lit, and Dissertation Abstracts. Additionally, personal contacts were established with students and faculty of the University of Missouri-Columbia to further identify sources of information.

Descriptors such as vocational education, technical education, vocational education issues, training, occupational education, technology education, United States of America, secondary schools, high schools, post secondary schools, and a combination of these were utilized to retrieve information.

Consensus Building (Delphi Process)

Vocational education issues yielded from the analysis of relevant literature were used in an instrument given to a Delphi panel to rate their importance. Instead of giving respondents blank sheets of paper to write their opinions, a modified Delphi process was used with an instrument designed to solicit structured input from panel members.

Instrument Design. Instruments and/or statements of issues from the literature were reviewed and analyzed for relevance and appropriateness to the needs of this study. No instrument was found to be suitable for the purposes of the study. Therefore, an instrument was constructed. To aid in the construction, issues raised by Chester P. Wichowski (1983), The NCSVE (1984), K. K. Navaratnam and J. Hillison (1985), June Schmidt (1985), Jeannie Oakes (1986a & b), Linda S. Lotto (1986), L. A. Phelps and R. P. Hughes (1986), Marvin Feldman (1986 and 1988), George H. Copa, Jane Plihal, and Marilyn A. Johnson (1986), A. Harry Passow (1987), and Wesley Budke (1988) formed a major part of the instrument.

A Likert-type scale was used in the instrument. Scheibe, Skutsch, and Schofer (1975) reported that the two most common methods of scaling in a Delphi are simple ranking and a Likert-type rating scale. In this study a four-point Likert-type rating scale was used. The scale has 4 as very important, 3 as somewhat important, 2 as somewhat unimportant, and 1 as very unimportant. The four-point scale presupposes that an item is basically either important or unimportant. After respondents made the initial choice, the degree to which the item was important or unimportant became their second decision.

The Delphi process instrument consists of: (1) a section on clusters and their definitions; (2) a category section, listing areas of concern in vocational education; (3) a section of issues that were identified through literature review; (4) a rating of the importance of the issues incorporated in the instrument; and (5) a section on the instrument where other issues could be added by the panelists.

Instrument Validation. The instrument was validated by sending it to experts who are knowledgeable in instrument construction and/or content specialists in vocational education. These experts and content specialists were different from the group that was used in the rating of the issues. To validate the instrument, 12 experts were identified from the literature and consultations with members of the vocational education profession.

A letter and a "Consent Form for Instrument Validation" were sent to these individuals. The letter requested their one-time participation in validating the Delphi instrument. Their decision on participating was returned in the consent form. Seven people did not participate. Out of the seven, one declined because of limited experience in vocational education and another is deceased. The remaining five did not return their forms.

To the five who responded, a copy of the instrument was sent with instructions for completion. Four were returned. Based on the returned comments and suggestions, the instrument was revised.

Identification of Panel Members. The panel members were the individuals who responded to the revised instrument items by rating the importance of each. They were also asked to add, delete, and/or modify any item. The following procedures were used to identify the respondents: (1) a letter and a "Nomination Form" were sent to all institution representatives of the UCVE to suggest a list of people that might be used for this study; (2) communication with faculty members at the University of Missouri-Columbia to suggest names; (3) identification of names from vocational education journals such as the *Vocational Education Journal* and the *Journal of Vocational Education Research*; and (4) identification of names from reports and commissions, such as the NCSVE and NAVE.

The above procedure yielded 104 names. The nominees were sent a letter and "Consent Form for Delphi Participation." The letter, which explained the tasks involved, asked them to serve as respondents in a three-round Delphi study. Sixty-five responded affirmatively.

Data Collection. The revised instrument was sent to the 65 respondents. Each rated the degree of importance of the clusters, categories, and issues. They also added, deleted, and/or modified the items. For each round, a self-addressed, stamped envelop was enclosed for returning the instrument. One week was given to respondents for the return of their ratings. After the one week, those who were delinquent were called and reminded the importance of their responses. Another week was allowed for this. Any returns after that week were rejected and not used. A similar procedure was followed for the second and third rounds.

Out of 65 respondents who were sent the first-round instrument, 53 (81.5%) returned them within the appropriate time. Out of the 53, 42 returned their instruments in round two, a 79% return rate. For round three, 40 of the 42 instruments were returned (95% return rate). These 40 respondents are listed in Appendix B. Overall, the three-round return rate was 60%.

Analysis of Responses. Responses from the respondents were analyzed in terms of the average importance ratings for each item on the instrument. The group mean and interquartile range were also calculated for each cluster, category,

and issue. All of the comments made by the respondents were compiled and analyzed. These comments were used in revising the second-round instrument.

The responses were summarized and reported on the second-round instrument. This revised instrument consisted of each panel member's initial rating, the group mean, and the level of consensus about the importance of each item. Respondents were asked to confirm or change their initial ratings if it did not fall within the group mean. This was to encourage consensus making. The same analytical procedures as in round one were used. Round three of the Delphi followed similar patterns as the first and second rounds.

The Statistical Analysis System (SAS) Univariate Procedure was used to process the data collected for the study. This yields, among others, the mean, the standard deviation, sum squares, the upper quartile percentile (Q3), the median or the fiftieth percentile, the lower quartile percentile (Q1), and the difference between Q3 and Q1 (QRANGE), which is the interquartile range. Of importance to the study were the means, Q1, Q3, and QRANGE.

Recommending UCVE Actions

The issues identified in the modified Delphi process were sent to all UCVE institutional representatives. The tasks for the representatives were to: (1) read and digest the identified issues; (2) suggest or recommend actions that UCVE could pursue for the identified issue at the category level; and (3) where appropriate, suggest hierarchical actions that need to be taken, or provide direction as to time and resources needed to effectively deal with the issues. Responses to tasks (2) and (3) were recorded on a "Recommendation Sheet."

The rationale for involving institution representatives at this stage of the study was that these are the people who are aware of the resources, characteristics, and working conditions of the institutions on the Council. Additionally, these are the people who provide the leadership not only to the Council, but also to the profession of vocational education.

The suggestions of the institution representatives form part of the recommendations contained in this report.

Results

The third-round Delphi instrument consists of five clusters, 21 categories, and 94 issues. A four-point (1–4) Likert-type scale was used for rating the importance of the items in the instrument. A cluster, category, or an issue is rated very important (4) if it is perceived to be crucial to the future of vocational education. A rating of somewhat important (3) means the item is significant to vocational education. A somewhat unimportant (2) rating means that vocational education should consider such item for its future, while very unimportant (1) items are immaterial to the future of vocational education. Table 1 shows the number of items in the instrument.

Consensus is defined as an agreement among respondents. The Delphi process was implemented in order to build consensus on the importance of issues identified in the study. Three levels (high, medium, and low) of consensus are used because there is some degree of agreement among members having the same rating. There is a high (H) consensus if the interquartile range is between 0 and 0.50; medium (M) if it is between 0.50 and 1.00; and low (L) if the interquartile range is over 1.00.

Table 1
Number of Items in the Three-Round Delphi Instrument

	Rounds		
Section	1st	2nd	3rd
Clusters	5	5	5
Categories	17	21	21
Issues	110	94	94
Total	132	120	120

Clusters

A cluster is defined as a broad heading that describes areas with common attributes. For example, the Program and Practice cluster contains items that deal

with program content and its implementation. Five clusters were developed for this study.

Analysis of the data shows that all the clusters have over 3.00 (somewhat important) rating. Equity and Opportunity cluster got the highest rating of 3.62, followed by Image and Self-perception (3.56). The lowest rated cluster, Contextual Concerns, received a mean rating of 3.08. This cluster describes environmental conditions that affect the practice and program of vocational education.

Only the Contextual Concerns cluster achieved a high level consensus (interquartile range 0.00) on the degree of importance from the panel members. The other four clusters received a medium consensus. (See Table 2).

Table 2
Mean Rating and Level of Consensus for Clusters

	Consensus		
Cluster	Mean	QR	Level
Equity and Opportunity	3.62	1.00	M
Image /Self-perception	3.56	1.00	M
Program and Practice	3.46	1.00	M
Contextual Concerns	3.08	0.00	H
Enhancement	3.10	1.00	M

QR is the interquartile range.
N = 40

Categories

A category is a major area of concern within a cluster. A review of related literature revealed 21 items termed "categories" by the researcher.

The highest rated category, Purposes and Outcomes, received a mean importance rating of 3.78. Teacher Education received the second highest rating with a mean of 3.72, followed by Leadership (3.67). The Support Services category received the lowest mean rating of 2.87.

The Purposes and Outcomes and the Support Services categories received high level consensus ratings on the degree of importance. Each of these categories has a 0.00 interquartile range. The rest of the categories had a medium level of consensus. Table 3 shows the categories with mean ratings and levels of consensus.

Issues

Issues are sub-areas of categories which detail specific areas of disagreement among vocational educators. For example, the Equity category contains among others the following issue: Should equality of educational opportunity mean equal access and exposure to knowledge for all students? There are 94 issues subsumed within the 21 categories. Table 4 shows the number of issues in each category.

The highest rated issue, with a mean rating of 3.75, is in the Public Perception category. It asks: Is vocational education perceived by the public as an integral part of the educational system? This issue also received a medium level consensus, with an interquartile range of 0.75. "Is there a type of research that is most appropriate to vocational education?" is a Research category issue that received the lowest mean rating of 2.35. It also has a medium level consensus—a 1.00 interquartile range.

Panel members reached a high consensus on the degree of importance of 17 out of the 94 issues (see Table 5). The Economic Change category issue: "Should 'international education' be part of vocational education?" received the lowest level of consensus with a 1.25 interquartile range. Seventy-seven issues received a medium level consensus.

Table 3
Mean Rating and Level of Consensus for Categories

		Consensus	
Category	Mean	QR	Level
EQUITY & OPPORTUNITY			
Equity	3.28	1.00	M
Access	3.53	1.00	M
IMAGE & SELF PERCEPTION			
Public Perception	3.53	1.00	M
Leadership	3.67	1.00	M
Collaboration	3.40	1.00	M
PROGRAM & PRACTICE			
Purposes and Outcomes	3.78	0.00	H
Curriculum	3.48	1.00	M
Instruction	3.63	1.00	M
Delivery System	3.26	1.00	M
Teacher Education	3.72	1.00	M
Articulation	3.31	1.00	M
Program Evaluation	3.63	1.00	M
CONTEXTUAL CONCERNS			
Basic Skills Thrust	3.30	1.00	M
Excellence Thrust	3.22	1.00	M
Technology's Change	3.55	1.00	M
Demographic Changes	3.33	1.00	M
Economic Change	3.25	1.00	M
ENHANCEMENT			
Standards and Accountability	3.56	1.00	M
Research	3.21	1.00	M
Support Services	2.87	0.00	H
Funding	3.54	1.00	M

QR is the interquartile range.
N = 40

Table 4
Number of Issues in Each Category

Cluster	Category	Issues
Equity & Opportunity	Equity	8
	Access	7
Image & Self-perception	Public Perception	3
	Leadership	4
	Collaboration	4
Program & Practice	Purposes and Outcomes	11
	Curriculum	3
	Instruction	3
	Delivery System	3
	Teacher Education	9
	Articulation	3
	Program Evaluation	3
Contextual Concerns	Basic Skills Thrust	3
	Excellence Thrust	7
	Technology's Change	6
	Demographic Changes*	0
	Economic Change	3
Enhancement	Standards and Accountability	7
	Research	3
	Support Services	4
	Funding*	0
TOTAL		94

* Categories that have issues addressed in other categories.

Table 5
Issues with High Level of Consensus

Category	Issue	Consensus		
		Mean	QR	Level
Access	Should enrollment of at-risk groups in vocational education be increased and equitably distributed?	3.00	0.00	H
	Should students enrolling in vocational education be assessed regardless of their academic ability and career goal?	2.95	0.00	H
Collaboration	Should interagency coordination be maximized to support education and employment of individuals with disabilities?	3.00	0.00	H
Program & Practice	What special programs are needed on vocational education to help individuals develop skills for successful family life?	3.00	0.50	H
Instruction	Which type of learning experiences are most beneficial in vocational education?	3.10	0.00	H
Delivery Systems	What types of education and training can be provided most effectively, and by which providers?	3.05	0.00	H
	At what grade level should vocational education take place?	2.95	0.00	H

Table 5 continued

Articulation	How should misunderstandings, such as differences in terminology, goals, outcomes, and services be reduced?	2.97	0.00	H
Program Evaluation	What should the purpose of program evaluation be in vocational education?	3.08	0.50	H
Basic Skills	Should adult literacy be increased to support training efforts?	3.08	0.00	H
Excellence	What concept of excellence should guide educators and society in providing educational experiences for students?	3.00	0.25	H
	Will high standards contribute to greater inequity if minority and poor students fail to meet them?	3.00	0.00	H
	Does the prevailing concept of excellence limit or increase access and equity in vocational education?	3.00	0.00	H
Standards & Accountability	How should vocational education be held accountable to federal and state mandates for program quality?	2.97	0.00	H
Support Services	Should financial support be provided to encourage adult at-risk to participate in vocational education programs?	2.93	0.00	H
	Should support services needed to enhance vocational education be identified?	3.03	0.00	H
	How should the support services for vocational education programs and students be financed?	3.00	0.00	H

QR is the interquartile range. N = 40

Recommendations

UCVE institutional representatives were mailed the third-round Delphi process results and a "Recommendation Sheet." They were asked to review the identified issues and record, on the "Recommendation Sheet," actions the Council might pursue. The suggestions were tallied, analyzed for content, and reported below.

Recommendations are given at the category level for three reasons. First, the items in the section on categories were gleaned from the review of the related literature. Therefore, they are an integral and important part of the data from the study. Second, the issues identified are more closely related to the categories than the clusters. In addition, the clusters were developed by the researcher to simplify and manage the Delphi instrument. Third, there are fewer categories (21) than issues (94). Practicality, simplicity, and manageability influenced the decision to use category level. It is therefore more relevant to recommend actions to be taken by UCVE at the category rather than the cluster or issue level.

Equity

UCVE should sponsor an institutional conference at the American Vocational Association (AVA) convention and focus on how vocational education might accommodate a greater diversity of learners, such as women, Hispanics, Blacks, handicapped, limited-English-proficient, older adults, and the incarcerated.

UCVE needs to design, write, and publish a monograph focusing on the clientele for vocational education.

UCVE might run a conference or symposium at the AVA convention on the important outcomes for all youth and adults to prepare them for work regardless of their ability level.

The Council should help identify existing vocational program models that serve diverse group of students.

Access

UCVE should sponsor a research effort to study the factors and conditions that influence participation in vocational programs.

UCVE should design, write and publish a monograph on at-risk students in vocational education.

Public Perception

The Council, in collaboration with other organizations such as the AVA, should develop and distribute a packet designed to inform the public about vocational education.

UCVE should develop a monograph for its 1992 publication seeking to inform the public about vocational education and its important contributions. UCVE members should debate this monograph with a focus on data, research, and theory emanating from the identified issues. Another monograph focusing on the issues, but less scholarly and more journalistic in nature, should be produced and widely distributed.

UCVE should seek funding from the Technical Education Foundation to conduct a research project to answer the questions: Is vocational education perceived by the public as an integral part of the education system? What strategies should be used to inform the public about vocational education?

The Council needs to generate and fund appropriate vocational education representation on policy commissions whose policies and publications have the potential to effect vocational education.

Leadership

UCVE, in collaboration with other organizations in vocational education, needs to set forth a meaningful direction for business and industry involvement with vocational education.

UCVE should set up a teleconference involving all segments of vocational education to discuss the critical needs and provide appropriate directions related to vocational education leadership.

The Council should conduct a Professional Day Conference on Leadership Development and Improvement in Vocational Education.

UCVE should encourage and fund a follow up of doctoral graduates from UCVE institutions and report the type of leadership positions occupied by these graduates.

UCVE must continue to support new federal legislation which will provide professional development funding for future leaders.

Collaboration

The Council should organize and promote a national conference on business and industry and education collaboration.

UCVE should encourage journal articles on business and industry and education collaboration.

UCVE should publish a monograph to focus on the extent and the ways business and industry should collaborate with vocational education. Authors should be called on from business and industry, government (federal, state, and local), and vocational education (secondary, post-secondary, rural, suburban, and urban).

Purposes and Outcomes

UCVE should design, write, and publish a monograph with chapters focusing on the following: vocational education as a sound element of academic education, vocational education preparing secondary students for higher education as well as employment, the extent to which vocational education should be responsive to labor market, the degree to which vocational education has helped students move into the academic and economic mainstream, and the roles and purposes of vocational education.

The Council should sponsor a study on the contemporary beliefs of business leaders, school administrators, teachers, etc. related to vocational education.

UCVE should establish a "Think Tank" using selected leaders and futurists to deliver papers on the philosophy/outcomes of vocational education.

UCVE should encourage studies on academic benefits of vocational education.

Curriculum

UCVE needs to initiate new thinking to revitalize the vocational program curriculum. A study to focus on the soft side of preparation for work (e.g. dual role, values, ethics, etc) needs to be undertaken.

UCVE should publish a monograph focussing on how to update curriculum and make it relevant to students' needs.

Instruction

The Council should conduct a study to review and update teaching and learning strategies in vocational education.

Delivery System

No recommendations offered.

Teacher Education

UCVE should encourage members of the Council to develop position papers on alternative certification programs designed to attract high-caliber individuals from business and industry to careers in teaching vocational education.

The Council should sponsor research to study the feasibility of requiring at least a baccalaureate degree for all vocational teachers. This could be in collaboration with the National Board for Professional Teaching Standards.

UCVE needs to establish a national study commission (like the Holmes Group) to provide direction and recommendations related to the issues identified.

UCVE should fund a Small Grant Research Program to study how minority vocational teachers can be attracted and retained, and how high-caliber individuals can be attracted to careers in teaching vocational education.

Articulation

UCVE should conduct a conference on articulation.

The Council should provide a small grant to determine a "theory base" or model for articulation among all levels where vocational education is delivered.

UCVE should encourage the expansion of the study and practice of 2+2+2 in each state.

Program Evaluation

UCVE should sponsor a comprehensive study on what vocational education does best, and disseminate this information widely.

UCVE needs to take the leadership role in clarifying outcomes. Because of the diversity of vocational education, there is no clear sense of what to measure.

Basic Skills

UCVE should publish exemplary instructional materials for integrating academic and vocational skills and implementing them in teacher education classrooms at UCVE institutions.

Excellence

No recommendations offered.

Technology's Change

UCVE should include "Current technological change: What are the implications for vocational education?" as a topic in its monograph series.

Demographic Changes

No recommendations offered.

Economic Change

UCVE should provide funds under the Small Grant Research Program to determine what role vocational education should have in making the American economy more competitive internationally.

Standards and Accountability

The Council should sponsor a conference or publish a monograph focusing on the role of the teacher, the quality of the learning institution, and contemporary pedagogy and its interrelated effects on student achievement.

UCVE should conduct a study (through the RFP process for UCVE faculty) of the State Standards of Performance and Assessment Systems required under the Perkins Act.

Research

UCVE needs to propose and lobby for a stronger role in setting a national research agenda with such groups and organizations as AVA and the NCRVE.

UCVE should design, write, and publish a "Dissertation Compendium" to summarize research completed within ten years, e.g. 1980–1989, 1990–1999, etc.

Institutions within the Council should be encouraged to review and share their major research interests at annual meetings.

The Council should plan and conduct a conference on needed research in vocational education.

Support Services

The Council should conduct a study of relationship between state departments of education and teacher education in the states.

Funding

The Council should continue the drive and effort for more financial resources available to vocational education.

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APPENDIX A

List of Issues and Their Ratings from the Third-Round Delphi Process

ISSUES CONFRONTING VOCATIONAL EDUCATION

SECTION 1. Clusters

A cluster is a broad heading that describes areas with common attributes. The following are clusters of concerns/issues, with their definitions, that were developed as a result of a literature review on issues confronting vocational education.

	Unimportant		Important		Mean	Consensus
	Very	Somewhat	Somewhat	Very		
	(1)	(2)	(3)	(4)		
1. Equity and Opportunity "Who benefits from vocational education and where do those who enroll in vocational education go to get and/or learn about it?"	___	2	11	26	3.62	M
2. Image and Self-perception "How do others see vocational education and how does vocational education perceive itself?"	___	1	15	23	3.56	M
3. Program and Practice "What is the program of vocational education and how is it implemented?"	___	1	19	19	3.46	M
4. Contextual Concerns "What are the environmental conditions that affect the practice and program of vocational education?"	___	6	24	9	3.08	H
5. Enhancement "What are the prevailing factors/components needed to enhance the provision and implementation of vocational education programs?"	___	8	19	12	3.10	M

SECTION 2. Categories

Each cluster contains a number of categories, which list the majors areas of concern.

	Unimportant		Important		Mean	Consensus
	Very (1)	Somewhat (2)	Somewhat (3)	Very (4)		
Equity and Opportunity						
o Equity	___	3	23	14	3.28	M
o Access	___	2	15	23	3.53	M
Image and Self-perception						
o Public Perception	___	1	17	22	3.53	M
o Leadership	___	___	13	26	3.67	M
o Collaboration	___	1	22	17	3.40	M
Program and Practice						
o Purposes and Outcomes	___	___	9	31	3.78	H
o Curriculum	___	1	19	20	3.48	M
o Instruction	___	___	15	25	3.63	M
o Delivery System	___	1	27	11	3.26	M
o Teacher Education	___	___	11	28	3.72	M
o Articulation	___	1	25	13	3.31	M
o Program Evaluation	___	___	14	24	3.63	M
Contextual Concerns						
o Basic Skills Thrust	___	1	26	13	3.30	M
o Excellence Thrust	1	4	20	15	3.22	M
o Technology's Change	___	___	18	22	3.55	M
o Demographic Changes	___	1	25	14	3.33	M
o Economic Change	___	2	26	12	3.25	M

	Unimportant		Important		Mean	Consensus
	Very	Somewhat	Somewhat	Very		
	(1)	(2)	(3)	(4)		
Enhancement						
o Standards and Accountability	___	1	15	23	3.56	M
o Research	1	2	24	12	3.21	M
o Support Services	___	8	27	3	2.87	H
o Funding	___	2	14	23	3.54	M

SECTION 3. Issues

Issues as contained in this section are detailed descriptions of areas of disagreement within the profession of vocational education that have been identified under each category.

EQUITY AND OPPORTUNITY

Equity

• Should equality of educational opportunity mean equal access and exposure to knowledge for all students?	___	8	18	14	3.15	M
• Does vocational education provide relevant experiences to students comparable to those provided in academic and other curriculum areas?	1	4	22	13	3.18	M
• Who should enroll in vocational education?	___	9	18	12	3.08	M
• Should there be one type of curriculum for all students?	5	18	11	6	2.45	M
• Should equity and excellence mean exposing all students to the same content?	4	14	18	2	2.47	M
• How should equity be assured in the access to new technology so that the gap between the advantaged and disadvantaged does not widen?	___	6	23	10	3.10	M
• What should be done to close the gap between quality of vocational education programs in affluent suburban high schools and less affluent inner-city or rural schools?	___	5	23	12	3.18	M

	Unimportant		Important		Mean	Consensus
	Very (1)	Somewhat (2)	Somewhat (3)	Very (4)		
• How should vocational education accommodate greater diversity of learners, including women, Hispanics, Blacks, the handicapped, limited-English-proficient individuals, older adults, and the incarcerated?	___	2	15	23	3.53	M
Access						
• Is the concept of "same for all" limiting students' access to vocational education programs?	___	10	21	9	2.98	M
• Should the enrollment of at-risk groups in vocational education be increased and equitably distributed?	___	8	23	9	3.00	H
• Should barriers (internal and external) to participation in vocational education be reduced?	___	3	21	16	3.33	M
• Should access to vocational education programs be increased for high-risk adults?	___	2	25	11	3.24	M
• Should students enrolling in vocational education be assessed and placed according to interest, ability, and potential?	___	8	26	6	2.95	H
• Should vocational education programs serve students regardless of their academic ability and career goal?	1	3	19	16	3.28	M
• Should equal access and equity be insured in vocational education?	___	3	22	15	3.30	M
IMAGE AND SELF PERCEPTION						
Public Perception						
• Is vocational education perceived by the public as an integral part of the educational system?	___	___	10	30	3.75	M
• Are vocational educators held in high esteem by the public?	___	5	23	12	3.18	M

	Unimportant		Important		Mean	Consensus
	Very	Somewhat	Somewhat	Very		
	(1)	(2)	(3)	(4)		
• Should strategies be designed for informing the public about vocational education?	___	___	13	27	3.68	M
Leadership						
• Who should champion the cause of vocational education?	___	6	22	11	3.13	M
• Are vocational educators taking the leadership roles?	___	5	19	16	3.28	M
• What should the reactions of vocational educators be towards the various reports on education?	___	10	24	6	2.90	M
• Who should dictate the agenda for vocational education?	___	2	20	18	3.40	M
Collaboration						
• To what extent should business and industry collaborate with vocational education?	___	___	15	25	3.63	M
• In what ways should business and industry collaborate with vocational education?	___	1	19	20	3.48	M
• Would such collaboration transfer control from vocational education to business and industry?	2	15	20	3	2.60	M
• Should interagency coordination be maximized to support education and employment of individuals with disabilities?	___	7	26	7	3.00	H

PROGRAM AND PRACTICE	Unimportant		Important		Mean	Consensus
	Very (1)	Somewhat (2)	Somewhat (3)	Very (4)		
Purposes and Outcomes						
• Should vocational education be included as a sound element of an academic curriculum?	1	4	9	25	3.49	M
• Should vocational education be considered as the "new basic"?	1	11	21	7	2.85	M
• Should students at the secondary level be prepared for college as well as employment?	2	3	13	21	3.36	M
• Is vocational education a body of knowledge, an educational process, or both?	2	4	23	11	3.01	M
• Do vocational education programs tap the intellectual disposition of the student?	2	9	21	8	2.88	M
• Should vocational education focus on students' transition from school to work or should its emphasis be on reinforcing basic academic skills?	2	3	24	11	3.10	M
• To what extent should vocational education be responsive to the labor market?		2	19	19	3.43	M
• Does vocational education help students move into the academic and economic mainstream?	1	1	19	19	3.40	M
• What should the roles and purposes of vocational education be?	1	1	9	29	3.65	M

	Unimportant		Important		Mean	Consensus
	Very (1)	Somewhat (2)	Somewhat (3)	Very (4)		
• What special programs are needed in vocational education to help individuals develop skills for successful family life?	___	9	20	9	3.00	H
• Should vocational education provide experiences on how to deal with family stress and stability?	1	13	19	6	2.77	M
Curriculum						
• Should there be changes in curriculum and teaching to reinforce the goals of equity and excellence?	___	13	20	6	2.82	M
• What should the characteristics of a quality vocational education program be?	___	4	18	17	3.33	M
• Should a core curriculum be taught in vocational education?	1	15	19	4	2.66	M
Instruction						
• What are the most effective methods of combining basic skills with occupationally relevant training?	___	2	23	4	3.31	M
• Does vocational education have evidence to show what instructional methods, techniques, and materials are optimally effective in teaching its programs?	___	3	25	11	3.21	M
• Which type of learning experiences are most beneficial in vocational education?	___	4	27	8	3.10	H
Delivery Systems						
• What types of education and training can be provided most effectively, and by which providers?	___	7	23	9	3.05	H
• Where are the basic skills needed for success in the workplace best taught?	___	2	22	15	3.33	M
• At what grade level should vocational education take place?	___	9	24	7	2.95	H

	Unimportant		Important		Mean	Consensus
	Very	Somewhat	Somewhat	Very		
	(1)	(2)	(3)	(4)		
Teacher Education						
• Should teacher competence in providing vocational education to at-risk learners be increased?	___	5	19	16	3.28	M
• What should be done to strengthen the instructional skills of non-degreed vocational teachers, including those already teaching and those who seek entry into vocational teaching from business and industry?	___	1	18	21	3.50	M
• How should vocational teacher pre-service and in-service preparation be improved?	___	1	12	27	3.65	M
• How can minority vocational teachers be attracted and retained?	___	1	11	27	3.64	M
• How can vocational education teachers become more competent in the recruitment and intake assessment of special groups?	___	13	22	5	2.80	M
• What is the nature of the curriculum for developing competent beginning vocational education teachers?	1	2	18	19	3.38	M
• How can high-caliber individuals be attracted to careers in teaching vocational education?	1	2	7	30	3.65	M
• What strategies should be used for inservice education of vocational education teachers?	___	5	25	10	3.13	M
• How can the qualitative improvement of vocational teachers be achieved?	___	4	16	19	3.38	M
Articulation						
• To what extent should there be articulated vocational education programs at the elementary, secondary, community college, and university levels?	___	2	20	18	3.40	M
• How should misunderstandings such as differences in terminology, goals, outcomes, and services be reduced?	___	7	26	6	2.97	H

	Unimportant		Important		Mean	Consensus
	Very (1)	Somewhat (2)	Somewhat (3)	Very (4)		
• What methods may be used to achieve articulated vocational education program at the elementary, secondary, community college, and university levels?	___	5	24	11	3.15	M
Program Evaluation						
• What should the purpose of program evaluation be in vocational education?	1	4	23	9	3.08	H
• Which aspects of vocational education program should be evaluated?	1	4	20	11	3.14	M
• Who should decide the effectiveness of the vocational education program evaluated?	1	5	20	12	3.13	M
CONTEXTUAL CONCERNS						
Basic Skills						
• Should vocational education reinforce and improve the basic skills of adult workers?	___	___	24	15	3.38	M
• Should adult literacy be increased to support training efforts?	___	3	29	6	3.08	H
• In what ways can academic skills be better integrated with vocational skills?	1	2	15	21	3.44	M
Excellence						
• What concept of excellence should guide educators and society in providing educational experiences for students?	1	7	21	9	3.00	H
• Will mandating higher standards and assessing their attainment result in greater excellence?	___	10	25	4	2.85	M
• Will high standards contribute to greater inequity if minority and poor students fail to meet them?	1	7	23	9	3.00	H
• How should vocational education deal with the reduction in time as a result of the increased emphasis on academic requirements?	___	68	19	17	3.33	M

	Unimportant		Important		Mean	Consensus
	Very (1)	Somewhat (2)	Somewhat (3)	Very (4)		
• Does the prevailing concept of excellence limit or increase access and equity in vocational education?	1	7	23	9	3.00	M
• Should the characteristics of vocational education programs that enhance excellence be identified?	1	4	16	19	3.33	M
• Should vocational education be considered as a part of the drive for excellence in education?	1	3	14	22	3.43	M
Technology						
• Should the study of the concept of technology be required for all students?		14	20	5	2.80	M
• How should technology be taught in vocational education?	1	11	26	2	2.71	M
• With respect to resource, what should appropriate uses of technology be?	2	20	15	2	2.44	M
• Will new skills be made available for teachers to use educational technology appropriately and effectively?	1	9	25	4	2.82	M
• Should technology be used to customize and individualize instruction?		10	24	5	2.90	M
• Should technology be used to facilitate instructional management without differentiation?	2	13	20	3	2.63	M
ENHANCEMENT						
Standards and Accountability						
• How should the quality of curriculum be assessed?		4	18	17	3.33	M
• Should there be standards for defining an effective vocational education teacher?		3	25	12	3.23	M

	Unimportant		Important		Mean	Consensus
	Very (1)	Somewhat (2)	Somewhat (3)	Very (4)		
• What should be evaluated to ascertain the effectiveness of vocational education programs?	___	4	16	20	3.40	M
• Who should assess vocational programs?	___	10	24	9	2.90	M
• What is the most effective mix of efforts that supports both legal compliance and program improvement?	___	17	22	1	2.60	M
• Should assessments of instructional quality or student achievement be part of the standards?	___	3	21	15	3.31	M
• How should vocational education be held accountable to federal and state mandates for program quality?	___	7	26	6	2.97	H
Research						
• Should research be conducted to provide evidence that vocational education programs provide the student with both economic and social benefits?	1	3	17	19	3.35	M
• Is there a type of research that is most appropriate to vocational education?	4	18	18	___	2.35	M
• Should there be research on what actually happens in a vocational education class?	1	5	21	13	3.15	M
Support Services						
• Should financial support be provided to encourage adults at-risk to participate in vocational education programs?	___	9	25	6	2.93	H
• Should methods of funding vocational education equitably be identified?	1	3	22	14	3.23	M
• Should support services needed to enhance vocational education be identified?	___	6	27	7	3.03	H
• How should the support services for vocational education programs and students be financed?	2	5	24	2	3.00	H

	Unimportant		Important		Mean	Consensus
	Very	Somewhat	Somewhat	Very		
	(1)	(2)	(3)	(4)		
Economic Change						
• What role should vocational education play in making American economy more competitive internationally?	___	3	9	26	3.61	M
• Should "international education" be part of vocational education?	2	7	17	12	3.03	L
• Should vocational education programs emphasize high-tech occupational fields?	3	11	20	4	2.66	M

APPENDIX B

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